Sur name		Centre Number	Candidate Number
First name(s)			0

GCSE   EDUQAS

Mock Test Papers- Paper1 -Test2

MATHEMATICS – Component 1
Non-Calculator Mathematics
FOUNDATION TIER

2 hours 15 minutes

For Examiner's use only		
Question	Maximum Mark	Mark Awarded
1.	9	
2.	4	
3.	4	
4.	9	
5.	4	
6.	4	
7.	4	
8.	4	
9.	6	
10.	4	
11.	6	
12.	4	
13.	7	
14.	8	
15.	2	
16.	6	
17.	2	
18.	3	
19.	5	
20.	4	
21.	5	
22.	6	
23.	3	
24.	2	
25.	5	
Total	120	

ADDITIONAL MATERIALS

An additional formulae sheet.
The use of a calculator is not permitted in this examination.
A ruler, protractor and a pair of compasses may be required.

INSTRUCTIONS TO CANDIDATES

Use black ink or black ball-point pen.
Do not use gel pen or correction fluid.
You may use a pencil for graphs and diagrams only.
Write your name, centre number and candidate number in the spaces at the top of this page.
Answer **all** the questions in the spaces provided.
If you run out of space, use the additional page(s) at the back of the booklet, taking care to number the question(s) correctly.

INFORMATION FOR CANDIDATES

You should give details of your method of solution when appropriate.
Unless stated, diagrams are not drawn to scale.
Scale drawing solutions will not be acceptable where you are asked to calculate.
The number of marks is given in brackets at the end of each question or part-question.
You are reminded of the need for good English and orderly, clear presentation in your answers.

Formula list

Area and volume formulae

Where r is the radius of the sphere or cone, l is the slant height of a cone and h *is the* perpendicular height of a cone:

$$\text{Curved surface area of a cone} = \pi rl$$

$$\text{Surface area of a sphere} = 4\pi r^2$$

$$\text{Volume of a sphere} = \frac{4}{3}\pi r^3$$

$$\text{Volume of a cone} = \frac{1}{3}\pi r^2 h$$

Kinematics formulae
Where a is constant acceleration, u is initial velocity, v *is final velocity, s is displacement from the p*osition when $t = 0$ and t is time taken:

$$v = u + at$$

$$s = ut + \frac{1}{2}at^2$$

$$v^2 = u^2 + 2as$$

1. (a) Calculate each of the following.

      (i) $9000 \div 100$ [1]

      (ii) 93×1000 [1]

      (iii)   6-17   [1]

(b) Complete this sum.   [1]

$$\text{................} + 514 = 800$$

(c) Complete each statement with a number from the box.

| 4 | 6 | 8 | 11 | 17 | 36 | 64 | 76 |

      (i)   .... is a prime number.   [1]

      (ii)   .... is a multiple of 12.   [1]

      (iii)   .... is a square number.   [1]

(d) Write $0 \cdot 7$ as a fraction in its simplest form.   [2]

Turn over.

2. (a) (i) Circle the best expression for the chance that it will snow in the UK in December. [1]

Impossible   Unlikely   Even chance   Likely   Certain

(ii) A jar contains equal numbers of red marbles and blue marbles.
Sarah takes one marble at random from the jar.
Circle the best expression for the chance that Sarah takes a red marble.

[1]

Impossible   Unlikely   Even chance   Likely   Certain

(b) One letter is chosen at random from the 7-letter word EXAMPLE.

(i) On the probability scale below, mark with an arrow (↓) the probability
that the letter chosen from the word EXAMPLE is M.

[1]

0   1

(ii) A, E, I, O, U are vowels.

On the probability scale below, mark with an arrow (↓) the probability that
the letter chosen from the word EXAMPLE is a vowel.

[1]

0   1

3.
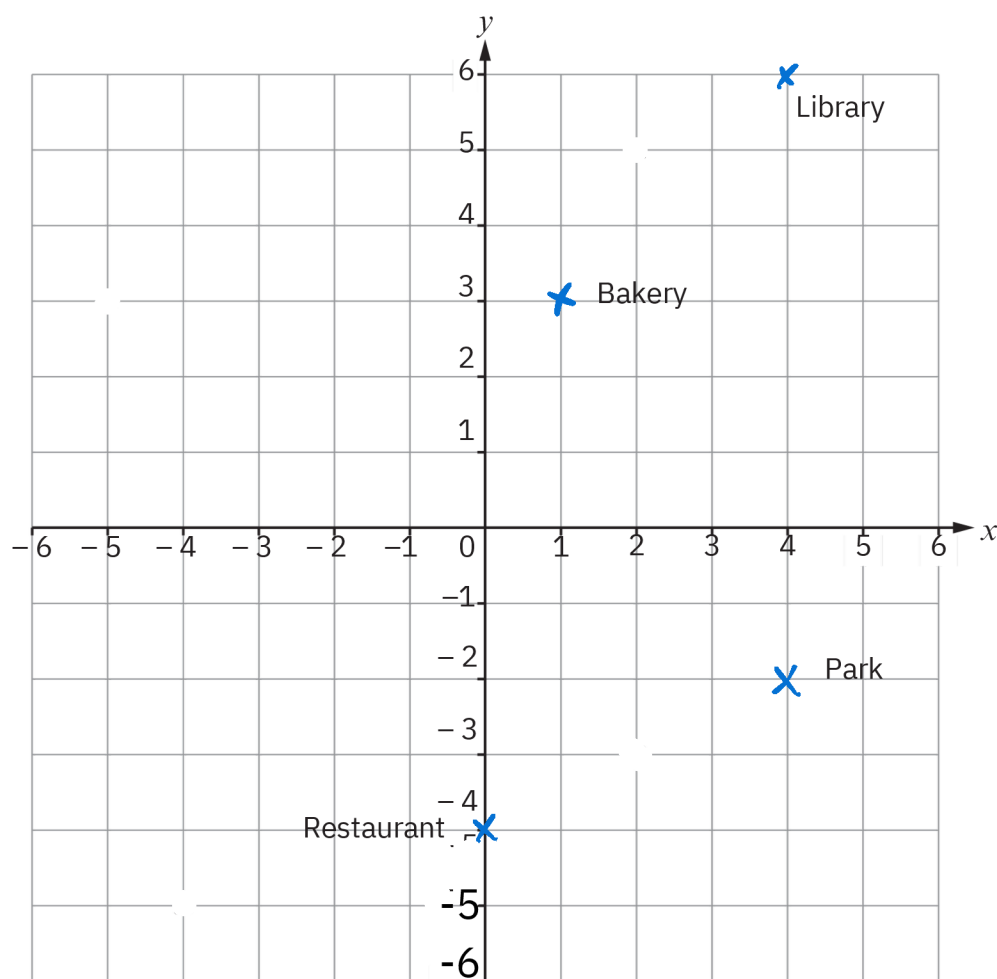
The diagram is drawn on a 1cm square grid.
It shows the location of some places in a town.

(a)   Write down the coordinates of the bakery.

Bakery (**....................** , …………………)   [1]

(b)   There is a bus stop (B) half-way between the library and the park.

Mark the position of the bus stop on the diagram.   [1]

(c)   The scale of the diagram is 1cm represents 100m.
There is a straight path from the library to the park.
How long is the actual path?
Give your answer in metres.   [2]

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Prepare 4 GCSEs

05

Turn over.

4. (a) Sarah is choosing what to wear.
She chooses from the following options:

| **Skirt:**
Blue (B)
or Pink (P) | and | **Top:**
Green (G)
or Yellow (Y) | and | **Shoes:**
Black (K)
or White (W) |
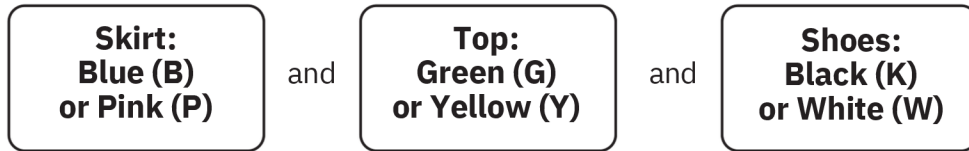
(i) Complete the table to show all the different choices that Joanie has.
The first two have been completed for you. [2]

Skirt	Top	Shoes
B	G	K
B	G	W

You may not need all the lines in the table.

(ii) Sarah is equally likely to choose any of the possible options.
What is the probability that she chooses a pink skirt, a yellow top, and black shoes? [1]

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(b) (i) Sarah jogs to the library.
         She leaves home at 11:15 and arrives at the library at 11:45.
         How many minutes does it take Sarah to jog to the library?

[2]

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(ii) Sarah then walks 2.4 km to the café. This takes 30 minutes.
      What is Sarah's average walking speed?
      Give your answer in kilometres per hour.

[2]

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(iii) Sarah takes a bus home

      She is charged £1.50 per kilometre.
      She pays a total of £9, which includes a £1 service fee.
      How many kilometres is Sarah's house from the café?

[2]

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Turn over.

5. (a) Write down a decimal that is between 75% and 76%. [1]

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(b) Alex takes two math tests.

In the first test, he scores $\frac{15}{20}$

In the second test, he scores $\frac{18}{25}$.

In which of these tests does Alex have the better result?

First test [ ]   Second test [ ]

Show how you decide. [3]

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6. (a) A basket contains m marbles.
A large basket contains four times as many marbles as a small basket.

Find an expression for the total number of marbles in 2 small baskets and 1 large basket.
Simplify your answer.

[2]

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....

Total number of marbles = ...…

(b) Each marble weighs 3.5 grams.
How much do 150 marbles weigh?
Give your answer in kilograms.

[2]

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....…kg

Turn over.

7. (a) On the 1 cm square grid below, draw a rectangle that has an area of 12 cm² and a
perimeter of 14 cm. [2]

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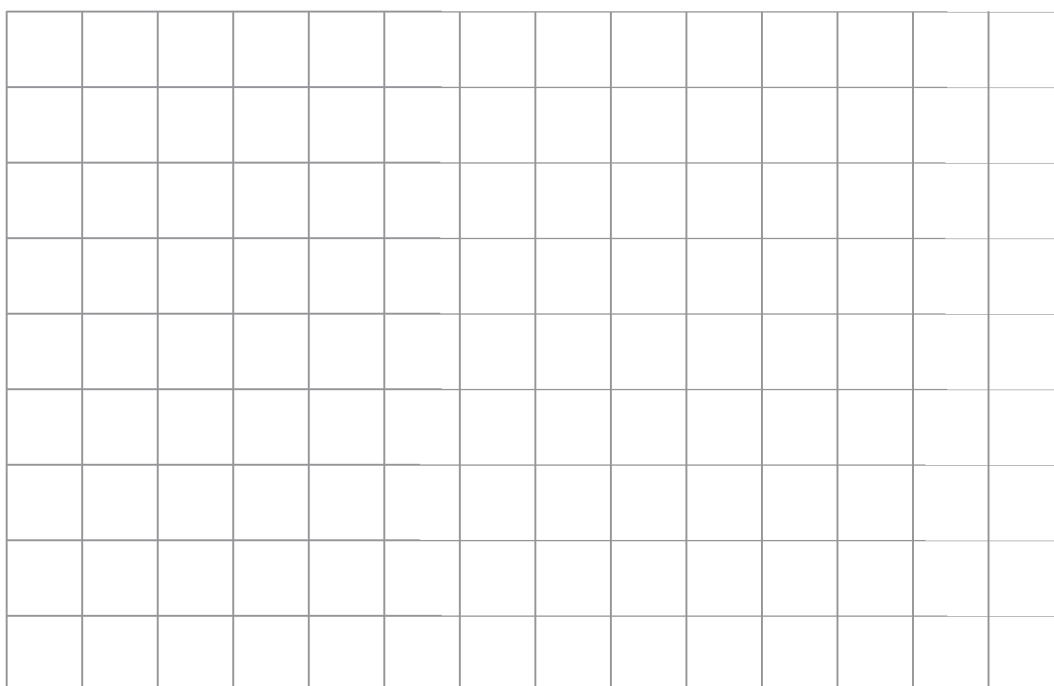
(b) The radius of a circle is 10 cm.

(i) Write down the diameter of this circle. [1]

....

.....................................cm

(ii) Write the ratio of the length of the radius to the length of the diameter.
Give the ratio in its simplest form. [1]

....

....

radius : diameter = ...: ....

Examiner
only

8. (a) Calculate 9×63. [2]

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(b) Put one pair of brackets in each calculation to make it correct.

(i) $7 \times 2 - 4 + 5 = 15$ [1]

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(ii) $\sqrt{49} \div 7 + 2 = 3$ [1]

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Turn over.

9. Ethan, Chloe, and Liam all work in the same bakery.

(a) Ethan works for 4 hours and earns £56.

Calculate how much Ethan is paid for each hour.   [2]

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(b) One week, Chloe works for 10 hours and earns £150.
The next week, Chloe works for 15 hours.
How much does Chloe earn for the second week?   [2]

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(c)   Liam earns £20 for each hour that he works.
He is given a 5% pay rise.
By how much does the amount he is paid for each hour increase?   [2]

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10. The table shows some of the values of $y = 2x + 1$ for $-2 \le x \le 2$

x	−2	−1	0	1	2
$y = 2x+1$				3	5

(a) Complete the table. [2]

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....

(b) On the grid, draw the graph of y = 2x + 1 for −2≤x≤2   . [2]

Turn over.
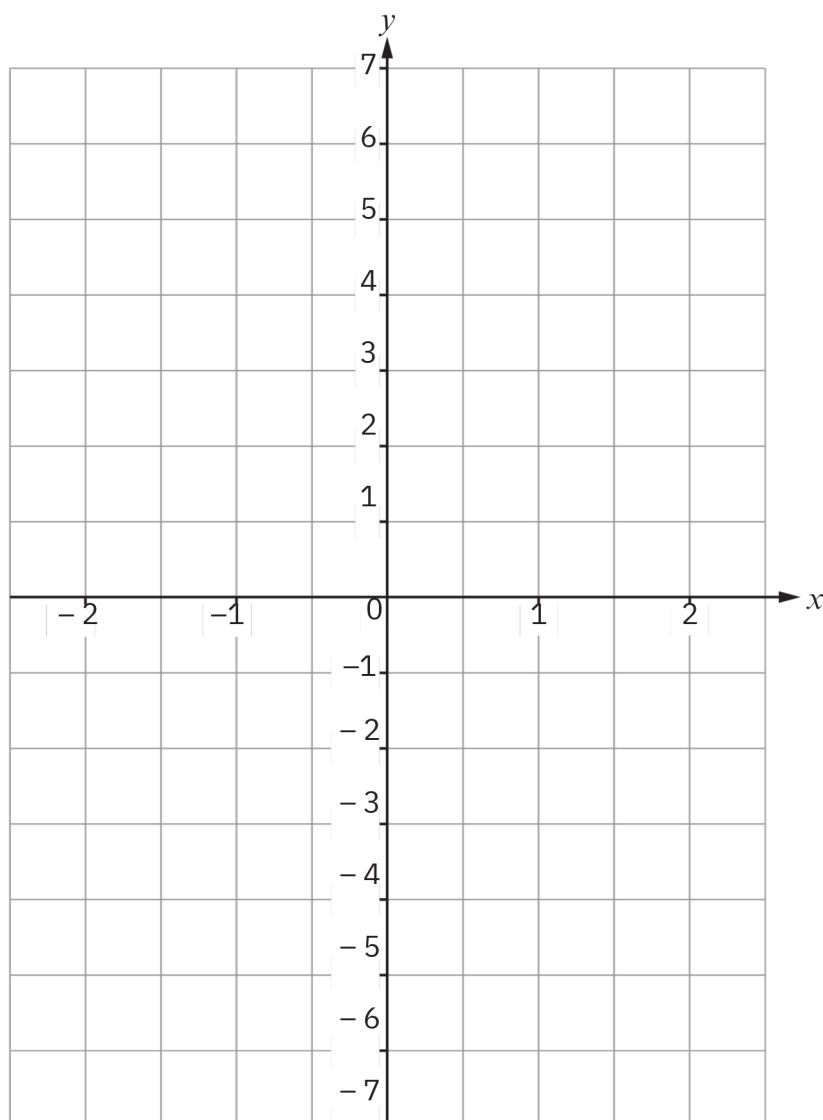
11. (a) The cost of a smartphone was £250 plus 20% VAT.

What was the cost of this smartphone including VAT? [3]

(b)

TechEd: Laptop computer

Deposit is one-third of the price.
Pay the balance in 6 equal monthly payments.

Jamie bought a laptop computer from EduTech and paid the deposit and 6 equal monthly payments of £80.

How much was Jamie's deposit? [3]

Deposit £ ....…

12. Emily is shopping in a supermarket.

(a)   Emily sees this information label on the shelf:

> Chocolate Bars 100 grams
> Our Price £2
> £3.00 per 50 grams."

She tells the supermarket manager that this information is misleading.

Explain why Emily is correct.   [1]

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(b)   Eeshu decides to buy some chocolate chip cookies.
Here are her options:
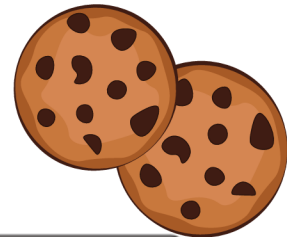
> Chocolate Chip Cookies 200 gms
> Our Price £1.20
> £6.00 per 100 grams

> Chocolate Chip Cookies 150 gms
> Our Price £0.90
> £5.40 per 100 grams

Eeshu wants to buy the packet which is better value for money.

Which packet of cookies should Eeshu buy?

200 grams ☐   150 grams ☐

Show how you decide.   [3]

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Turn over.

13. (a) Calculate each of the following.

      (i) $15\cdot7 - 1\cdot85$ [2]

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      (ii) $0\cdot3 \times 0\cdot9$ [1]

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      (iii) $\dfrac{5}{11} + \dfrac{1}{3}$ [2]

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    (b) $72 \times 2.5 = 180$

Use this to complete the following statement:

$$720 \times \text{..................} = 1800$$

[2]

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14. Alex is a baker.

Last year he sold all the cakes he made for a total of £12,000.

(a) He made cakes for 50 weeks and sold them all for £15 each.
How many cakes did Alex make each week?
You may assume he made the same number of cakes each week

[4]

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....cakes

(b) Alex also makes pastries.
Last year, for 300 days, he made one pastry each day.
He sold all these pastries for £30 each.
How much more did Alex receive last year from selling pastries than he did from selling cakes?

[4]

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Alex received £ ....more

Turn over.

15.
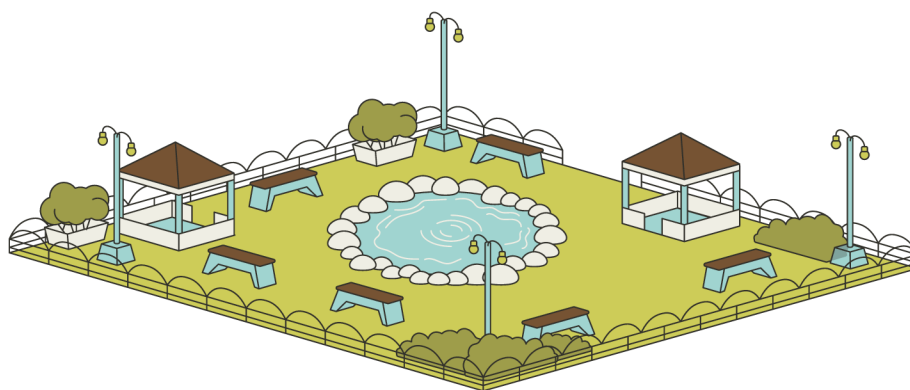
Park

Jamie is conducting a survey.

He wants to find out how often people in his neighborhood go to the local park.

Jamie decides to survey only the 20 people at a local community center meeting.

Is this a reasonable plan?

Yes ☐   No ☐

Give **two** reasons to support your answer.   [2]

1. ....

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2. ....

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16. Alex is arranging some paving slabs to create a decorative border around a rectangular garden.
Some of the slabs are blue and some are yellow.
There are no gaps between the slabs and no gaps between the slabs and the edge of the garden.

Garden

Diagram not drawn to scale

The ratio of blue slabs to yellow slabs is 4:1.

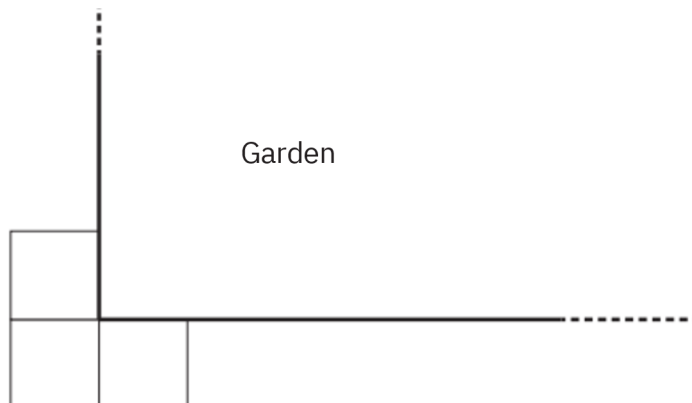The garden measures 3 meters by 4 meters.

Each slab is a square with a side length of 40 centimeters.

A blue slab costs £4, and a yellow slab costs £5.

[6]

How much does it cost Alex to create the border around his garden?

17. The bearing of R from S is 75°.

Find the bearing of S from R. [2]

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18. The lengths of the three sides of a triangle are in the ratio 4 : 6 : 9.

(a) What fraction of the perimeter is the longest side of this triangle? [1]

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(b) The perimeter of this triangle is 90 cm.

Find the length of each of the three sides of this triangle. [2]

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........................cm, ... cm, ...cm

19. The nth term of a sequence is given by $3n + 5$.

(a)   Work out the difference between consecutive terms. [2]

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(b)   (i)   Solve $3n + 5 < 50$. [2]

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(ii)   Write down the number of terms of this sequence that are less than 50. [1]

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Number of terms = ...

Turn over.

20. Emma is traveling in Europe and wants to buy a souvenir.

The price of the souvenir in a shop is £45.
The price of the same souvenir online is $70 including delivery.
On the day of her purchase, the exchange rates were as follows:

£1 = $1.30
£1 = €1.15

Is it cheaper to buy the souvenir in the shop or online?

Shop ☐   Online ☐

Show how you decide. [4]

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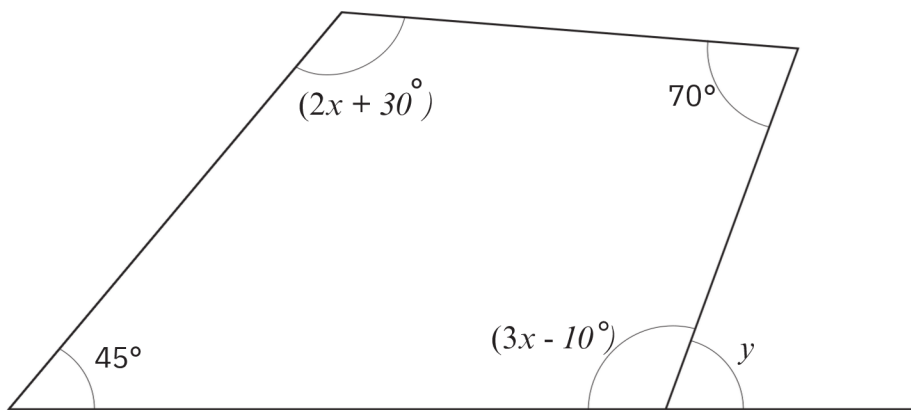
21.

$(2x + 30°)$

70°

45°

$(3x - 10°)$

y

Diagram not drawn to scale

The diagram shows a quadrilateral.

Use algebra to find the size of the exterior angle y [5]

$y =$ ....°

Turn over.

22. (a)
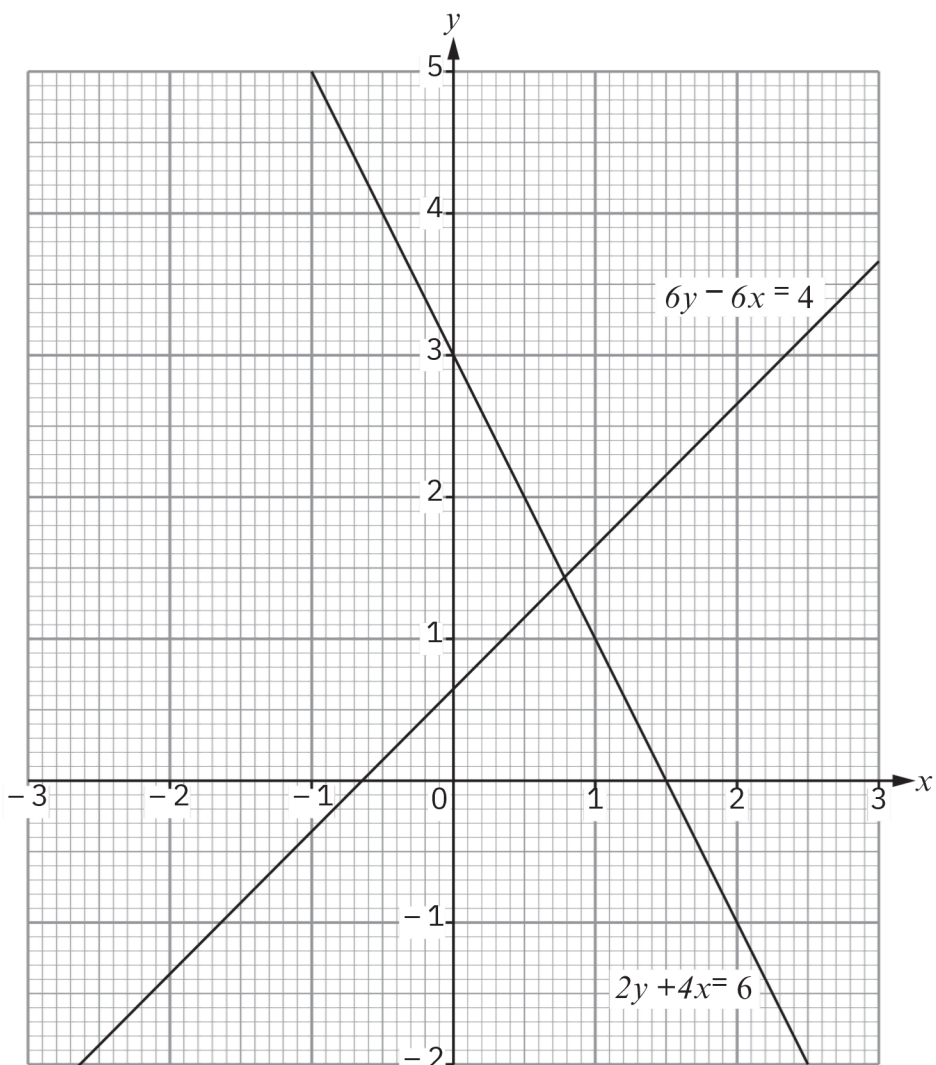
Use the diagram to solve the following simultaneous equations.

$$6y - 6x = 4$$
$$2y + 4x = 6$$

Give your answers correct to 1 decimal place. [2]

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$x =$ .... $y =$ ....

(b)   The diagram shows the curve $y = x^2 + 2x - 8$
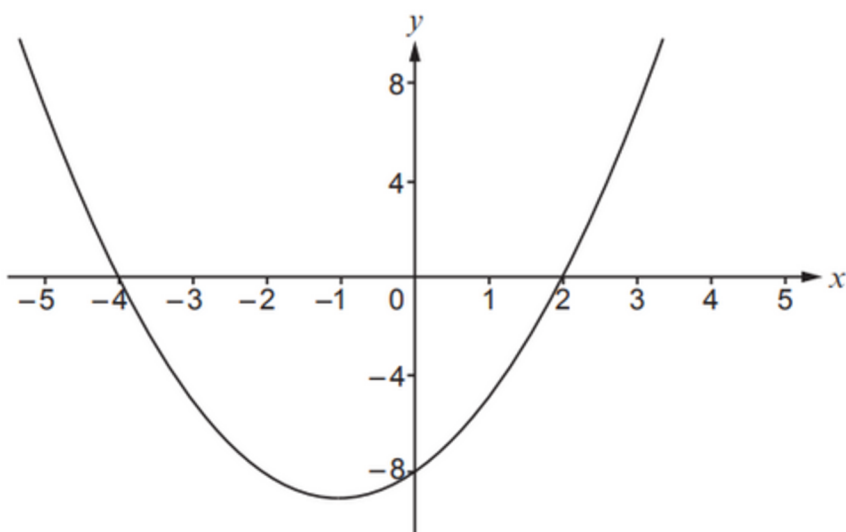
(i)   Write down the y-intercept of the curve.   [1]

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(ii)   Find the coordinates of the turning point of the curve.   [2]

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(................, ...)

(iii)   Use the diagram to solve $x^2 + 2x - 8 = 0$ [1]

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$x =$ .... or $x =$ ....

23. The surface area of a planet is 6.2×10^{8} km.^{2}

70% of the planet's surface is covered by water.
Estimate the surface area of the planet's water-covered regions, and give your answer in standard form.

[3]

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24.
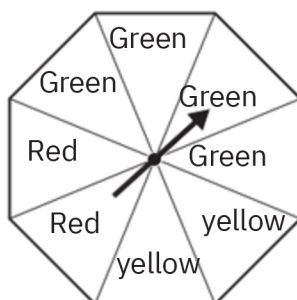
The diagram shows a fair spinner.
Liam spins the spinner twice.
(i) What is the probability that the spinner lands on yellow both times?

[2]

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25. The table shows some information about the cost per person to take a train.

Adults (£)	a
Children (£)	c

The Smith family of 3 adults and 2 children pay £15.00 to take the train.
The Johnson family of 4 adults and 3 children pay £21.00 to take the train.
The Garcia family has 2 adults and 4 children.
How much does the Garcia family pay to take the train?
You must use an algebraic method and show all your working

[5]

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The Garcia family pays ....

END OF PAPER